

REMARKS

New claim 5 is presented. No new matter is presented, and accordingly, approval and entry of the new claim is respectfully requested.

Claims 1-5 are pending and under consideration.

PAGE 8: ALLOWABLE SUBJECT MATTER

Claims 3 and 4 are indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant appreciates the indication of allowable subject matter. However, claims 3 and 4 are not rewritten to independent form, since patentability is submitted to reside in independent claim 1 from which claims 3 and 4 depend.

PAGE 2: OBJECTION TO DRAWINGS UNDER 37 CFR 1.83(a)

The Examiner objects to the drawings under 37 CFR 1.83(a) contending that the: limitation as recited in dependent claims 3 and 4 "wherein the etching back of the first conductor includes over-etching the first conductor so that only a portion of the first conductor lower than the surface of the semiconductor substrate remains un-removed" must be shown or the feature(s) canceled from the claim(s).

(Action at page 2).

Applicant submits that the features recited in claims 3 and 4 are illustrated by the current drawings. See for example, FIGs. 2-12, and supported by discussion in the present application from paragraphs [0029]- [0035] that discuss a method of manufacturing a semiconductor device according to an aspect of the present invention. In particular, FIG. 7 and paragraphs [0031]- [0032] discuss an etching back so "top of the polysilicon 72 is lower than the upper surface of the gate oxide film on the substrate surface by an amount of overetching t_{ov} ."

Applicant submit that the drawings comply with 37 CFR 1.83(a) and request the objection be withdrawn and the drawings accepted.

PAGES 3-7: REJECTION OF INDEPENDENT CLAIM 1 (AND DEPENDENT CLAIM 2) UNDER 35 U.S.C. 102(e) AS BEING ANTICIPATED BY FUJISHIMA ET AL. (U.S.P. 6,316,807)

The Examiner rejects claims 1-2 under 35 U.S.C. 102(e) as being anticipated by Fujishima '807.

As set forth in MPEP §706.02 entitled Rejection on Prior Art, anticipation requires that the reference must teach every aspect of a claimed invention. Applicant submits that Fujishima

'807 does not support an anticipatory-type rejection by not discussing features recited in the independent claim 1 (and dependent claim 2).

Independent claim 1 recites a method for manufacturing a semiconductor device, including "forming a gate insulating film, having a uniform thickness, along a side surface and a bottom surface of the trench and inside the trench; forming a first conductor along a surface of the gate insulating film etching back the first conductor in an active region so that the first conductor remains only in side surface regions of the trench; . . . (and) forming an interlayer dielectric inside said first conductor; selectively removing a bottom of the interlayer dielectric in the active region."

The Examiner contends that Fujishima '807 col. 7, lines 19-31 and FIG. 13a teaches:

forming a gate insulating film 80, having a uniform thickness, along a side surface and a bottom surface of the trench and inside the trench; forming a first conductor 82 along a surface of the gate insulating film.

(Action at page 4).

Applicant submits, however, that gate oxide layer 80 illustrated in Fujishima '807 FIG 13a. does not teach a gate insulating film having a uniform thickness, as the Examiner contends, but rather illustrates an oxide layer with a varying thickness.

Conclusion

Since features recited by independent claim 1 and dependent claim 2 are not taught by the cited art, the rejection should be withdrawn and claims 1-2 allowed.

NEW CLAIM

New dependent claim 5 is added to recite features in an alternate fashion. New claim 5 recites method for manufacturing a semiconductor device "wherein the trench is formed by one etching."

These features of claim 5 patentably distinguish over the cited art.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: April 11, 2005

By: Paul W. Bobowiec
Paul W. Bobowiec
Registration No. 47,431

1201 New York Avenue, NW, Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501